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saw large streaks on the sun, having the appearance of water, extending from both eastern and western limbs about one-sixth of his diameter towards the centre, several small spots being distinctly visible on the streaks."

In some additional remarks upon the spots, Captain Shea says, "These spots take thirteen days to pass over the centre of the sun's disc, and although there is a constant succession of them, I have not been able to discover any day, for the last eighteen months, that the same number have appeared a second time as to size or relative position to each other."

A correspondent wishes to know where he can find the most complete account of the solar spots.*

Lunar Eclipse of March 8, 1849. By Professor Challis, *with the* Five-feet Equatoreal, *at the* Cambridge Observatory.

"The commencement of the eclipse was estimated to have taken place at 11^h 25^m 53^s, Greenwich Mean Time, and the end at 14^h 25^m 43^s, Greenwich Mean Time. The degree of obscuration of the limb at these two times was judged to be very nearly the same, but whether the shadow was in actual contact with the limb was quite uncertain. It is probable that the mean of the times, viz. 12^h 55^m 48^s, Greenwich Mean Time, may be compared with considerable accuracy with observations made in a similar manner elsewhere.

"The disappearance of 82 *Leonis* was observed with great exactness to take place at 13^h 13^m 17^s·62, Greenwich Mean Time. The occultation occurred at the part of the limb which was most obscured by the eclipse, and as the moon's periphery was still very visible, I took particular care to notice whether there was any projection of the star on the moon's disk. The star made a kind of indentation of the limb without apparent diminution of brightness, and disappeared instantaneously, as soon as the periphery passed through the centre of its brightness.

"I noticed a faint, ruddy light spread over the eclipsed portion of the moon's disk, most conspicuous at the parts most remote from the boundary of the shadow. By looking at the moon with a small telescope, magnifying fourteen times, this appearance was rendered very sensible. I have never observed anything similar when the illumined part of the moon's disk has been visible between new moon and the first quarter. It seems hardly possible to doubt that the origin of this light is the same as that of the redness of the sky at sunrise and sunset."

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* Photographic pictures surely would be attainable with a telescope mounted equatoreally, and carried by good clock-work. For researches into the *motion* of the spots, the positions should be determined micrometrically, or an image thrown on a screen might serve, with proper precautions. Reference should be made to the N and S, and to the preceding and following limbs.

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By Mr. Hind, at South Villa Observatory.

"Beginning of the eclipse at 11ʰ 25ᵐ 18ˢ mean time. The end was not observed.

"Nothing unusual was remarked. The shadow had a greenish tinge. About the time of greatest phase it was dark enough to render the eclipsed limb barely traceable with a power of 50 on the eleven-feet refractor."

Mr. Chalmers, at Weston-super-Mare, observed as follows:— "I saw a star of the sixth magnitude approaching the moon. It travelled along the dark edge, impinging on it, for about 6ᵐ or 7ᵐ. At a quarter past one it was occulted, disappearing entirely. Within two minutes it reappeared, and again travelled along the edge of the moon for about 2ᵐ or 3ᵐ. It was then a second time occulted, and reappeared in about 10ᵐ, when it finally quitted the moon."

On the Longitude of Hobarton, Van Diemen's Land.

By Commander Shadwell, R.N.

This determination is deduced from meridian transits of the moon observed by Lieut. Kay, R.N., in the years 1843, 4, and 6, while in charge of the Magnetic Observatory there. The instrument employed is an excellent transit by Troughton and Simms, of 30 inches focal length, and 2¼ aperture, mounted on an iron stand. The position is stated to be "in the garden of the Magnetic Observatory at Rossbank, about a mile outside the town of Hobarton."* Commander Shadwell, after a careful examination of the observations, level readings, &c., speaks highly of the correct adjustment of the instrument and the skill of the observer.

There is a large gap in the series, caused by the breaking of the tube of the level, which was sent to England for reparation. One or two spare tubes should always accompany the transit on distant expeditions, and, in case of need, an observer should be ready to supply the place of the level by observations in a mercurial surface.†

In computing Lieut. Kay's observations, Commander Shadwell has used Mr. Riddle's formula, taken from the twelfth volume of the *Memoirs* of the Society, except that he has applied "the sidereal time of the moon's semidiameter passing the meridian" to

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* This description is somewhat vague, the site of the transit has probably been connected with some fundamental point, to which the station of Hobarton is referred; if not, no time should be lost in effecting the connexion.

† Either by an eyepiece, with which he can see the wires reflected, looking downwards, and so adjust; or by noting the transits of two or three high known stars, as seen in the mercury, which, compared with transits of other known stars, seen *directly*, will give an excellent level error, and with very little trouble.

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